

**CRUISE REPORT
S192**

**Scientific data collected aboard
*SSV Robert C. Seamans***

Honolulu, Hawaii – Palmyra Atoll, USA – Honolulu, Hawaii

28 March 2004 – 2 May 2004



Photo by Jeffrey M. Schell

**Sea Education Association
Woods Hole, Massachusetts**

Contact Information:

Dr. Jeffrey M. Schell
Sea Education Association
P.O. Box 6
Woods Hole, MA
02543

508-540-3954 (phone)
800-552-3633 (phone)
508-457-4673 (fax)
www.sea.edu

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Table 1. S-192 Ship's crew and student participants

Nautical Staff

Phil Sacks	Captain
Beth Doxy	Chief Mate
Sarah Beck	2 nd Mate
Stephen Kirk	3 rd Mate
Gray	Engineer
Hillary Mendillo	Assistant Engineer
Danielle	Steward
Lisa	Deckhand
Lucy	Deckhand
Kate	Deckhand

Scientific Staff

Jeff Schell	Chief Scientist
Jim Watkins	1 st Scientist
Chris Perle	2 nd Scientist
Mary Engels	3 rd Scientist

Students

Rebecca R. Bartlett	Bowdoin College
Heather M. Brundage	Massachusetts Institute of Technology
Molly E. Debiak	Alaska Pacific University
Allison M. Dellner	University of Vermont
Shanna K. Dunn	Pennsylvania State University
Eric R. Eilbacher	Boston University
Cara M. Ellis	Sarah Lawrence College
Nicole E. Fancher	St. Lawrence University
Alexandra H. Frank	Cornell University
Ryan E. Joyce	Roger Williams University
Rachael A. Kefalos	Skidmore College
Jennifer M. Knight	University of Massachusetts, Amherst
Jared C. Kosin	University of New Hampshire
Abigail A. Lowell	Colby College
Laryssa R. Ohlson	Roger Williams University
Timothy J. Pusack	Colgate University
Elizabeth D. Richey	Jacksonville University
Allison L. Robinson	Colgate University
Erin V. Rodgers	New College of Florida
Lindsey M. Ryckman	University of Pennsylvania
Laura R. Sharpless	Haverford College
Magdalena F. Vinson	Smith College

Data Description

This cruise report provides a record of data collected during S-192 aboard the SSV Robert C. Seamans on her roundtrip voyage from Honolulu, Hawaii to Palmyra Atoll, U.S. (Figure 1). We collected samples or data with 130 individual deployments from 60 discrete stations (Table 2) along our cruise track. In addition we continuously sampled water depth, sub-bottom profiles and Acoustic Doppler Current Profiles (ADCP) along with flow-through sea surface temperature, salinity and in vivo fluorescence. This report summarizes physical, chemical and biological characteristics at the sea surface (Table 3, Figure 2) and at depth (Tables 4 and 5, Figures 3) along our cruise track. Large scale hydrography and summarized by contour plots of temperature and salinity (Figure 4); whereas large scale current patterns are summarized by contour plots of current direction and magnitude (Figure 5). In addition, the distribution, density and diversity of plankton and nekton at the sea surface (Table 6 and Figure 5) and at depth (Table 7) are presented. Depths of surface sediment collections are given in Table 8. Additional CTD, CHIRP and ADCP data are not reported here but are available on request through Sea Education Association (SEA) and the Chief Scientist. The information in this report is not intended to represent final interpretation of the data and should not be excerpted or cited without written permission from SEA.

As part of SEA's educational program, undergraduates conduct student-designed oceanographic research during the cruise. Project topics include physical, chemical, biological and geological oceanography (Table 9). Student research efforts culminate in a written report and public presentation to the ship's company. These papers are available on request from SEA.

Jeff Schell
Chief Scientist
S-192

Figure 1. Final cruise track for S-192 based on noon and midnight (local time) positions.

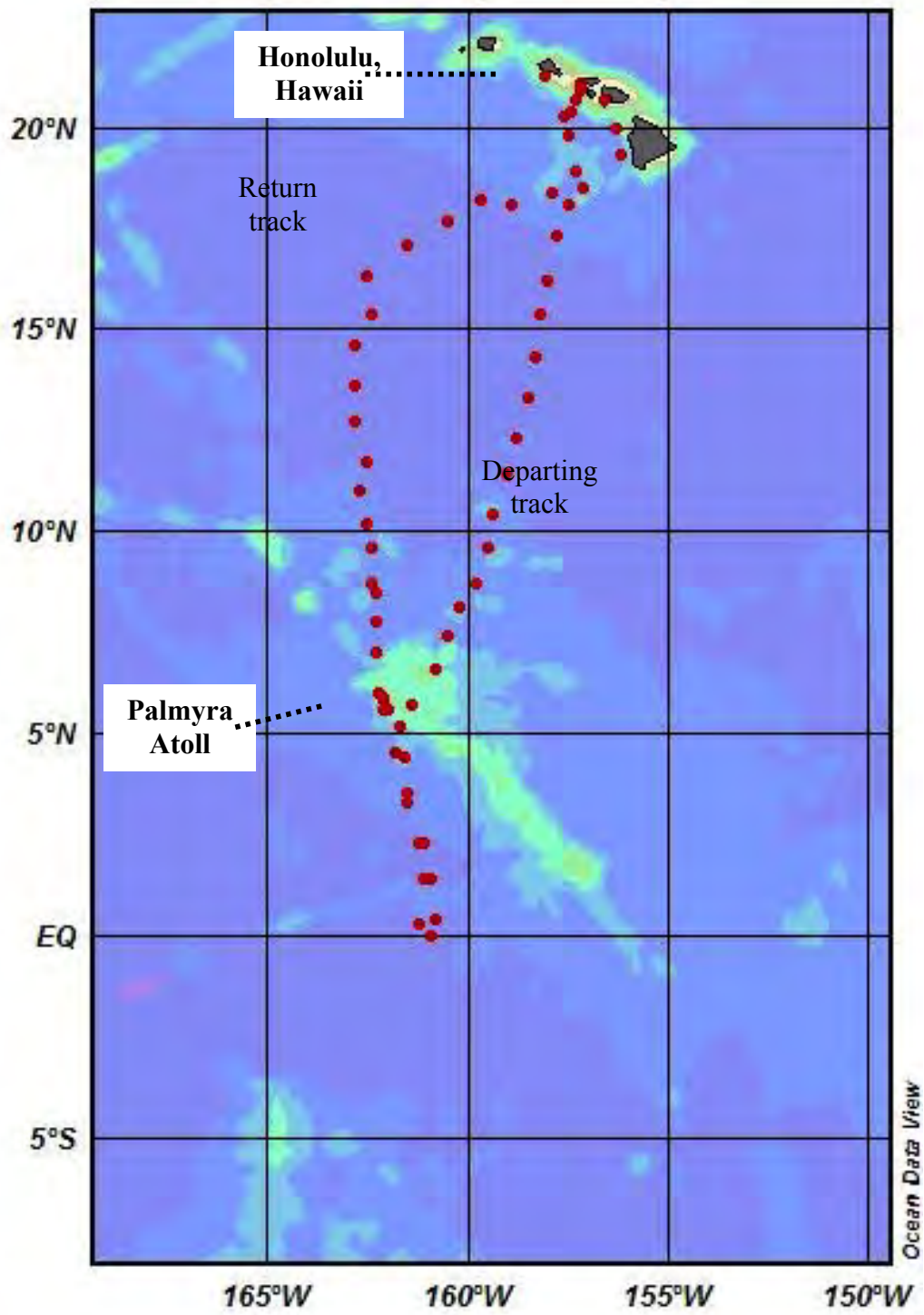


Table 2. Station summary of oceanographic sampling for S-192.

Station # (S192-)	Date (2004)	Local Time (+10 GMT)	Log (nm)	Lat (decimal Deg N)	Lon (decimal Deg W)	Location	Station Type
001A	27-Mar	15:44	0.0	21.8	-159.5	S Honolulu Harbor	SG
001A	27-Mar	15:44	0.0	21.3	-157.9	S Honolulu Harbor	HC
001B	27-Mar	16:22	0.0	22.2	-159.1	S Honolulu Harbor	SG
001B	27-Mar	16:22	0.0	21.3	-157.9	S Honolulu Harbor	HC
001C	27-Mar	17:00	0.0	21.3	-157.9	S Honolulu Harbor	SG
001C	27-Mar	17:00	0.0	21.3	-157.9	S Honolulu Harbor	HC
002A	27-Mar	18:22	0.0	21.3	-158.0	S Pearl Harbor	SG
002A	27-Mar	18:22	0.0	21.3	-158.0	S Pearl Harbor	HC
002B	27-Mar	20:28	0.0	21.2	-158.0	S Pearl Harbor	SG
002B	27-Mar	20:28	0.0	21.2	-158.0	S Pearl Harbor	HC
002C	27-Mar	21:10	0.0	21.2	-158.0	S Pearl Harbor	SG
002C	27-Mar	21:10	0.0	21.2	-158.0	S Pearl Harbor	HC
003	28-Mar	0:07	0.0	21.3	-158.1	S Oahu	GC
004	28-Mar	11:33	56.9	20.8	-157.3	Hawaiian Islands	NT
005A	28-Mar	16:42	81.4	20.7	-156.9	S Lanai	SG
005A	28-Mar	16:42	81.4	20.7	-156.9	S Lanai	HC
005B	28-Mar	17:19	81.4	20.7	-156.9	S Lanai	SG
005B	28-Mar	17:19	81.4	20.7	-156.9	S Lanai	HC
005C	28-Mar	18:14	81.4	20.7	-157.0	S Lanai	SG
005C	28-Mar	18:14	81.4	20.7	-157.0	S Lanai	HC
006A	29-Mar	0:05	112.6	20.7	-156.7	S Maui	SG
006A	29-Mar	0:05	112.6	20.7	-156.6	S Maui	HC
006B	29-Mar	1:32	112.6	20.9	-157.7	S Maui	SG
006B	29-Mar	1:32	112.6	20.9	-156.6	S Maui	HC
006C	29-Mar	1:55	112.6	21.7	-156.7	S Maui	SG
006C	29-Mar	1:55	112.6	21.7	-156.6	S Maui	HC
007	29-Mar	15:30	84.4	19.7	-156.2	Hawaiian Islands	NT
008A	29-Mar	19:20	207.8	19.5	-156.0	W Hawaii	SG
008A	29-Mar	19:20	207.8	19.5	-156.0	W Hawaii	HC
008B	29-Mar	20:01	207.8	19.5	-156.0	W Hawaii	SG
008B	29-Mar	20:01	207.8	19.5	-156.0	W Hawaii	HC
008C	29-Mar	21:15	207.8	19.5	-156.0	W Hawaii	SG
008C	29-Mar	21:15	207.8	19.5	-156.0	W Hawaii	HC
009	30-Mar	0:02	228.3	19.3	-156.2	Hawaiian Islands	NT
010	30-Mar	11:05	298.8	18.5	-157.1	Hawaiian Islands	CTD
010	30-Mar	12:04	298.3	18.5	-157.1	Hawaiian Islands	NT
011	30-Mar	14:58	309.5	18.3	-157.3	N Pensacola seamount	CTD
012	30-Mar	17:51	314.8	18.3	-157.3	Pensacola seamount	CTD
013	30-Mar	20:59	327.6	18.2	-157.4	S Pensacola seamount	CTD
014	31-Mar	0:05	336.6	18.1	-157.5	Hawaiian Islands	NT
016	31-Mar	0:18	438.8	16.3	-158.0	NEC	NT
015	31-Mar	10:26	379.8	17.4	-157.8	Hawaiian Islands	CTD
015	31-Mar	10:26	379.8	17.4	-157.8	Hawaiian Islands	RN
015	31-Mar	12:29	379.8	17.4	-157.7	Hawaiian Islands	HC
018	1-Apr	0:22	565.1	14.3	-158.3	NEC	NT

Station # (S192-)	Date (2004)	Local Time (+10 GMT)	Log (nm)	Lat (decimal Deg N)	Lon (decimal Deg W)	Location	Station Type
017	1-Apr	10:51	490.0	15.4	-158.2	NEC	CTD
017	1-Apr	11:07	490.4	15.4	-158.2	NEC	NT
019	2-Apr	10:00	615.7	13.4	-158.5	NEC	CTD
019	2-Apr	10:00	615.7	13.4	-158.5	NEC	HC
019	2-Apr	10:45	614.8	13.4	-158.5	NEC	RN
020	2-Apr	20:41	664.3	12.5	-158.7	N Seadragon seamount	CTD
021	3-Apr	0:30	679.5	12.3	-158.8	Seadragon seamount	CTD
022	3-Apr	4:33	699.3	12.2	-158.8	S Seadragon seamount	CTD
023	3-Apr	19:53	782.0	10.6	-159.4	NEC	TT
023	3-Apr	21:02	783.9	10.6	-159.4	NEC	NT
024	4-Apr	0:04	797.8	10.3	-159.4	NEC	TT
024	4-Apr	1:19	800.0	10.3	-159.4	NEC	NT
025	4-Apr	3:54	810.2	10.2	-159.5	NEC	TT
025	4-Apr	5:07	811.8	10.2	-159.5	NEC	NT
026	4-Apr	11:15	843.0	9.6	-159.5	NEC	CTD
026	4-Apr	11:18	843.0	9.6	-159.5	NEC	HC
026	4-Apr	11:41	843.0	9.6	-159.5	NEC	RN
027	4-Apr	13:37	844.2	9.6	-159.5	NEC	NT
028	5-Apr	8:00	933.5	8.2	-160.1	N Spike seamount	CTD
029	5-Apr	11:53	946.7	8.1	-160.2	Spike seamount	CTD
030	5-Apr	17:25	968.1	7.9	-160.2	S Spike seamount	CTD
031	6-Apr	0:16	1000.0	7.4	-160.5	NEC	NT
032	6-Apr	10:03	1048.1	6.6	-160.8	NECC	NT
032	6-Apr	10:03	1048.1	7.6	-161.0	NECC	CTD
033	7-Apr	0:19	1110.2	5.7	-161.4	NECC	NT
034	7-Apr	8:34	1139.7	5.3	-161.7	SEC	CTD
034	7-Apr	8:34	1139.7	5.3	-161.7	NECC	HC
034	7-Apr	8:40	1139.7	5.3	-161.7	NECC	RN
034	7-Apr	11:26	1141.0	5.3	-161.7	NECC	NT
035	9-Apr	8:31	1395.6	1.4	-160.9	SEC	CTD
035	9-Apr	8:31	1395.6	1.4	-160.9	SEC	HC
035	9-Apr	8:44	1395.6	1.4	-160.9	SEC	RN
035	9-Apr	11:04	1396.0	1.4	-160.9	SEC	NT
036	10-Apr	0:23	1455.8	0.4	-160.8	SEC	NT
037	10-Apr	7:34	1470.5	0.1	-160.8	SEC	HC
037	10-Apr	7:35	1470.5	0.1	-160.8	SEC	CTD
037	10-Apr	7:41	1470.5	0.1	-160.8	SEC	RN
037	10-Apr	10:29	1470.5	0.0	-160.8	SEC	NT
038	10-Apr	23:40	1499.4	0.3	-161.2	SEC	NT
039	13-Apr	19:49	1852.0	5.8	-162.0	NECC	TT
039	13-Apr	20:02	1854.7	5.6	-162.0	NECC	NT
040	13-Apr	23:58	1862.8	5.6	-162.0	NECC	TT
040	14-Apr	1:15	1864.6	5.6	-162.0	NECC	NT
041	14-Apr	3:45	1872.2	5.7	-162.0	NECC	TT
041	14-Apr	5:03	1874.4	5.6	-162.1	NECC	NT
042	14-Apr	9:00	1888.1	5.8	-162.1	NECC	CTD
042	14-Apr	9:00	1888.1	5.8	-162.1	NECC	HC

Station # (S192-)	Date (2004)	Local Time (+10 GMT)	Log (nm)	Lat (decimal Deg N)	Lon (decimal Deg W)	Location	Station Type
042	14-Apr	11:22	1888.9	5.8	-162.1	NEC	NT
043	16-Apr	11:30	1893.5	5.9	-162.1	Palmyra Lagoon	GC
044	19-Apr	10:10	1989.5	7.8	-162.3	NEC	CTD
044	19-Apr	11:04	1989.8	7.8	-162.3	NEC	NT
045	19-Apr	20:28	2029.9	8.5	-162.3	NEC	TT
045	19-Apr	21:50	2031.1	8.4	-162.3	NEC	NT
049	20-Apr	0:16	2110.0	9.6	-162.4	NEC	NT
046	20-Apr	2:00	2036.6	8.4	-162.4	NEC	NT
047	20-Apr	4:44	2042.2	8.5	-162.4	NEC	TT
047	20-Apr	6:00	2042.2	8.4	-162.4	NEC	NT
048	20-Apr	10:03	2061.5	8.7	-162.4	NEC	TT
048	20-Apr	11:32	2062.9	8.7	-162.4	NEC	NT
046	20-Apr	0:38	2035.4	8.5	-162.3	NEC	TT
050	21-Apr	10:03	2148.2	10.2	-162.4	NEC	CTD
050	21-Apr	10:51	2148.3	10.2	-162.5	NEC	NT
051	21-Apr	22:52	2202.7	11.1	-162.7	NEC	NT
051	21-Apr	22:52	2202.7	11.1	-162.7	NEC	CTD
052	22-Apr	9:54	2239.5	11.6	-162.5	NEC	NT
053	22-Apr	23:05	2305.0	12.7	-162.7	NEC	NT
054	23-Apr	10:18	2350.2	13.6	-162.8	NEC	CTD
054	23-Apr	11:04	2350.4	13.6	-162.1	NEC	NT
055	23-Apr	22:51	2401.5	14.5	-162.8	NEC	NT
056	24-Apr	11:12	2465.5	15.4	-162.4	NEC	NT
056	24-Apr	11:12	2465.5	15.4	-162.4	NEC	CTD
057	24-Apr	23:03	2499.8	16.2	-162.6	NEC	NT
058	25-Apr	21:05	2604.0	17.2	-161.3	Hawaiian Islands	CTD
059	29-Apr	20:00	3050.5	20.8	-157.0	W Lanai	SG
060	30-Apr	0:30	3062.8	20.9	-157.2	S Molokai	2MN

Duplicate station numbers refer to different oceanographic equipment that was either deployed concurrently in the same location or was deployed sequentially in the same General Location but different latitude and longitude. The General Location for stations has been categorized by position (N – north, S – south, W – west, E – east, SW – southwest, NW – northwest, NE – northeast) relative to nearest island or by relevant sea surface currents. The latter are identified using the following abbreviations: NEC – north equatorial current, SEC – south equatorial current and the NECC – north equatorial counter-current. Lettered entries refer to different geographic locations along a continuous on-to-offshore transect around different Hawaiian Islands. Abbreviations for type of oceanographic equipment deployed: NT – neuston tow, PN – phytoplankton net, MN – meter net (either 1 or 2 m diameter), TT – tucker trawl, DN – dip net, CTD – conductivity, temperature and depth profiler, HC – hydrocast with 12 Niskin bottles, SG – shipek grab and GC – gravity core.